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Inside Wallops

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Experiment Could Lead to Spacecraft Design Breakthrough

An experiment that could lead to a breakthrough in the design of space vehicles has successfully completed its final design review and is scheduled for a flight demonstration in June.

The flight experiment will test ultra-high temperature ceramic material that could radically improve thermal protection of spacecraft through the extreme heat of reentry into Earth's atmosphere.

SHARP B2 experiment hardware
(NASA Ames Photo)

The Slender Hypervelocity Aero-thermodynamic Research Probe, or SHARP B2, is one of the Future-X flight experiments selected by NASA to help mold the future of space transportation.

NASA's Marshall Space Flight Center manages the Future-X Program. The SHARP B2 experiment is led by NASA's Ames Research Center.

Ultra-high temperature ceramic material could make it possible for space vehicles to have sharp leading edges, instead of the blunt body design common to today's spacecraft.

Engineers routinely design spacecraft with blunt leading edges that create a region of compressed air in front of the vehicle as it travels faster than the speed of sound. This region absorbs much of the heat associated with a spacecraft's reentry into Earth's atmosphere and keeps the vehicle's edges from overheating. Blunt body vehicles, however, are inefficient and have high drag, or friction, as they fly — resulting in large, expensive propulsion systems.

The ceramic material the Ames Center will test in flight could substantially lower the cost of boosting objects to space.

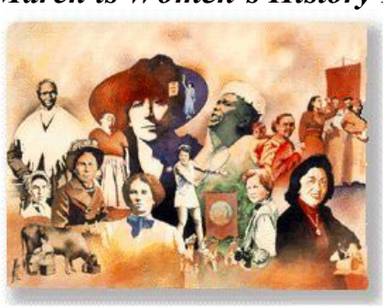
A modified Mk12A reentry vehicle — basically an aerodynamic nose cone — with four sharp leading edges will be lofted into space aboard a U.S. Air Force Minuteman III launch vehicle and will make a high-speed reentry into the atmosphere to test the ceramic material. Following reentry, the vehicle will deploy a drag chute and be recovered from the waters of the Pacific Ocean. The launch is scheduled June 28 from Vandenberg Air Force Base, Calif.

Billions of Miles Traveled

Three of NASA's interstellar spacecraft, Pioneer 10 and Voyagers 1 and 2, are still working after more than two decades in space. Ground controllers recently commanded Pioneer 10 to maneuver so that its signal could be better heard on Earth. The spacecraft is so low on power that its transmitter had to be turned off to allow it to execute the maneuver. After 90 minutes of blind flight, the transmitter was turned back on and Pioneer signaled the maneuver was complete. Because of the distance from Earth, the signal was received more than 10 hours after Pioneer sent it.

Launched on March 2, 1972, Pioneer 10 was the first spacecraft to travel through the Asteroid belt, and the first to make direct observations and obtain close-up images of Jupiter. Famed as the most remote object ever made by man, Pioneer 10 is now over 6.9 billion miles away. The spacecraft made valuable scientific investigations in the outer regions of our solar system until the end of its mission on March 31,1997. The Pioneer 10 weak signal continues to be tracked as part of a new advanced concept study of chaos theory. Pioneer 10 is headed towards the constellation of Taurus (The Bull). It will take the spacecraft over 2 million years to pass by one of the stars in the constellation.

March is Women's History Month



To celebrate Women's History Month, Jamantha Watson will present a one-woman show demonstrating how women have impacted history.

Watson has a master of fine arts from Virginia Commonweath University's Theatre Arts Department. She has appeared in numerous presentations including the made-for television movie: *Monticello - The Memoirs of Sally Hemings*. Watson is currently writing a novel, The Bluford.

The lunchtime presentation will be on March 8 in the Williamsburg Room of the Cafeteria beginning at 11:30 a.m. Tickets are available in the Exchange, Bldg. E-2. For further information contact Pat Pruitt, x1245.

Women's History Month activities are sponsored by the Wallops Federal Women's Program, Women of Wallops (WOW). For more information check out the WOW homepage: http://www.wff.nasa.gov/~FWP/

Wallops Shorts……..

Sounding Rockets Launched

A NASA Terrier-Black Brant sounding rocket was launched from the White Sands Missile Range, NM on Feb. 26. The payload was a galactic astronomy experiment to observe a White Dwarf star. Dr. Raymond G. Cruddace of the Naval Research Laboratory was the principal investigator. While the launch vehicle performed successfully, no useful science data was obtained. Predicted altitude was 179.36 miles (288.64 km). Actual altitude was 155.35 miles (250 km). The payload was successfully recovered.

A NASA Black Brant XII sounding rocket was successfully launched from the Poker Flat Research Range, AK on Feb. 26. The payload was a plasma physics experiment for principal investigator, Dr. David Knudsen, of the University of Calgary/Canada. The predicted altitude was 599.34 miles (964.5 km). Actual altitude was 615.62 miles (990.7 km).

Wallops on the Road

Pam Pittman (Advanced Architectures & Automation Branch), Debbie Parks (Real-Time Software Engineering Branch) Peter Turlington (Facilities Management Branch) and Marshall Ryon (FKW) took part in a Career Fair for Accomack County students held at Arcadia High School, March 1.

Debbie Parks (Real-Time Software Engineering Branch) spoke to 4th grade students at Broadwater Academy on March 2.

Doug Vandermark (Observational Science Branch) and Steve Bailey (Real-Time Software Engineering Branch) participated in a Career Fair at Washington High School on March 3.

Jan Neville Retires

Junius (Jan) J. Neville retired from the Carrier Systems Branch effective March 3, 2000, after 38 years of government service with NASA at Wallops.

Neville began his NASA career in 1962 as a summer student while attending Virginia Tech. After graduating in 1965 with a bachelor's degree in Mechanical Engineering, Neville worked in the Satellites, Probes and Planetary Projects Section before transferring to the Mechanical Systems Branch in 1967. He was reassigned to the Carrier Systems Branch after the 1998 Goddard Space Flight Center reorganization.

Jan Neville
Photo by R. Huey

Neville has been involved in many diverse assignments including Scout, the International Ozone Intercomparision program, the Biospace Technology Training Program, MOLA, TOPEX and Pegasus. He was responsible for developing flight hardware for the Black Brant XII sounding rocket as well as many other sounding rocket payloads. Since 1983, he has served as Chairman for the Airworthiness Review Board since 1983.

Wallops employees will miss Neville's comical laugh and upbeat sense of humor. He plans to catch up on home projects, build a dream cabin, volunteer for the Cape Charles Historical Society and go fishing. The Wallops community wishes him well in all his future endeavors.

Property Inventory

A Facility-Wide Property Inventory will be conducted at Wallops beginning March 7, 2000. This inventory is expected to take approximately two weeks. In order to obtain a good inventory, it will be necessary for the Inventory Team to visit almost every building at Wallops.

Property custodians and FOM's should be prepared to assist the Inventory Team by helping to locate all property and by having documentation such as loan slips and shipping documents readily available.

If you have any questions, call Joe Duke, x1332.

For Sale

1998 Coachman Catalina Lite 24' Camper. Like new condition. Many extras. Asking $11,000. Call (757) 665-4717.

This space reserved for mailing labels.

From FEDWeek March 1 Issue

Government-wide Buyouts Proposed

For the second year in a row the White House has proposed reinstating government-wide buyout authority, raising employee hopes in many agencies that they might become eligible for separation incentive payments worth up to $25,000 pre-tax. The same factors that last year caused Congress to ignore the idea to death are still in place this year. The primary concern is that the government is no longer cutting jobs at the rate it did in the mid to late 1990s, so there would seem to be less need for "soft landing" authorities such as buyouts. Another factor working against broad buyouts is that the two largest agencies that are undergoing the types of major job reductions and reorganizations in which buyouts are a useful management tool—Defense and IRS—already have the authority.

Other Concerns Over Buyouts at Work, Too

There's lingering suspicion, particularly among certain House leaders, that money in past buyout programs was not well spent. Since the overwhelming majority of buyout recipients take the money into retirement, there's a perception that the payments are just a bonus to recipients for doing what they would have done anyway—retiring. There's also a view that the cost of these special payments isn't covered by agency contributions into the retirement fund for buyout takers.

Targeted Buyouts Possible

Officials don't rule out enactment of buyouts targeted to individual agencies or even parts of agencies that are undergoing cutbacks. That happened last year, with approval of buyouts for Veterans Affairs and parts of the General Services Administration and Treasury.

Explosive Handlers Course

Date: March 24
8 a..m. to 4 p.m.

This course is offered at no cost to NASA and contractor employees. Information and course registration form can be found at:
http://www.wff.nasa.gov/~code803/pdf/explosive_handler.pdf
http://www.wff.nasa.gov/~code803/pdf/explosive_handler

For further information contact, Joe Drawdy, x1884.

NASA Visitor Center Events Scheduled for March

March 18 — Kite Flight

Kite flight is a 40-minute activity for children scheduled for 1 p.m. The program explores the history of flight and provides an opportunity for children to construct and fly their own kites.

Puppets in Space

Puppets in Space is a 10-minute puppet show presented at 11 a.m. on Saturdays and Sundays. Puppet astronauts and Sam the monkey will explore space flight and the space suit. An eight-minute version of the film "Astrosmiles" follows the puppet show.

Humans in Space

Humans in Space is a 30-minute program presented at 1 p.m. on Sundays. Children will learn what it's like to live and work in space including a review of what the astronauts eat and their wardrobes. The program is followed by a hands-on activity that gives children the opportunity to create their own "space helmet".

Children 5 to 10 years old can earn a "Space Ace" certificate and a lithograph any day they come to the Visitor Center by completing an activity sheet.

The Visitor Center is now open from 10 a.m. to 4 p.m., Thursday through Monday. The complex is closed on Tuesday and Wednesday. Admission to Visitor Center Programs is free and materials are supplied to construct a kite and space helmet. For further information, call x2298.

Safety Eyewear

Chesapeake Optical will be at Wallops on March 16 from 10 a.m. to Noon. The Chesapeake Optical van will be in the Building F-10 parking lot. Although this is a different vendor, the procedure and policy for obtaining prescription safety eyeglasses will be the same as in the past.

Individuals who want to get the glasses should have their prescriptions with them to provide to the Chesapeake Optical optician. Call the Health Unit, x1266 for further information.

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